USGS science for a changing world

Earthquake Shaking **Green** Alert

GSN ANSS USAID FROM THE AMERICAN PEOPLE

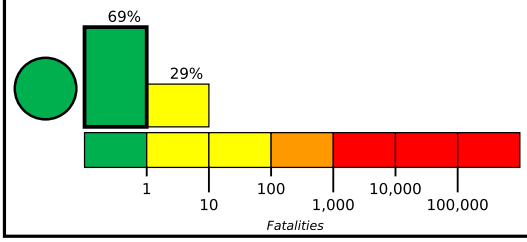
M 4.1, 2km NNW of The Geysers, CA

Origin Time: 2020-03-25 11:57:38 UTC (Wed 04:57:38 local)
Location: 38.7903° N 122.7650° W Depth: 2.1 km

PAGER Version 6

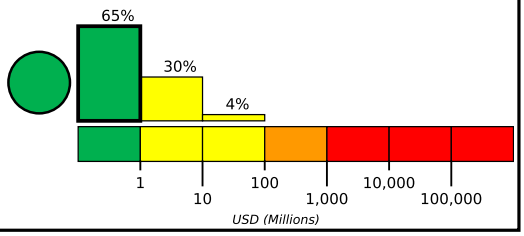
Created: 6 hours, 32 minutes after earthquake

Estimated Fatalities



Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.

Estimated Economic Losses

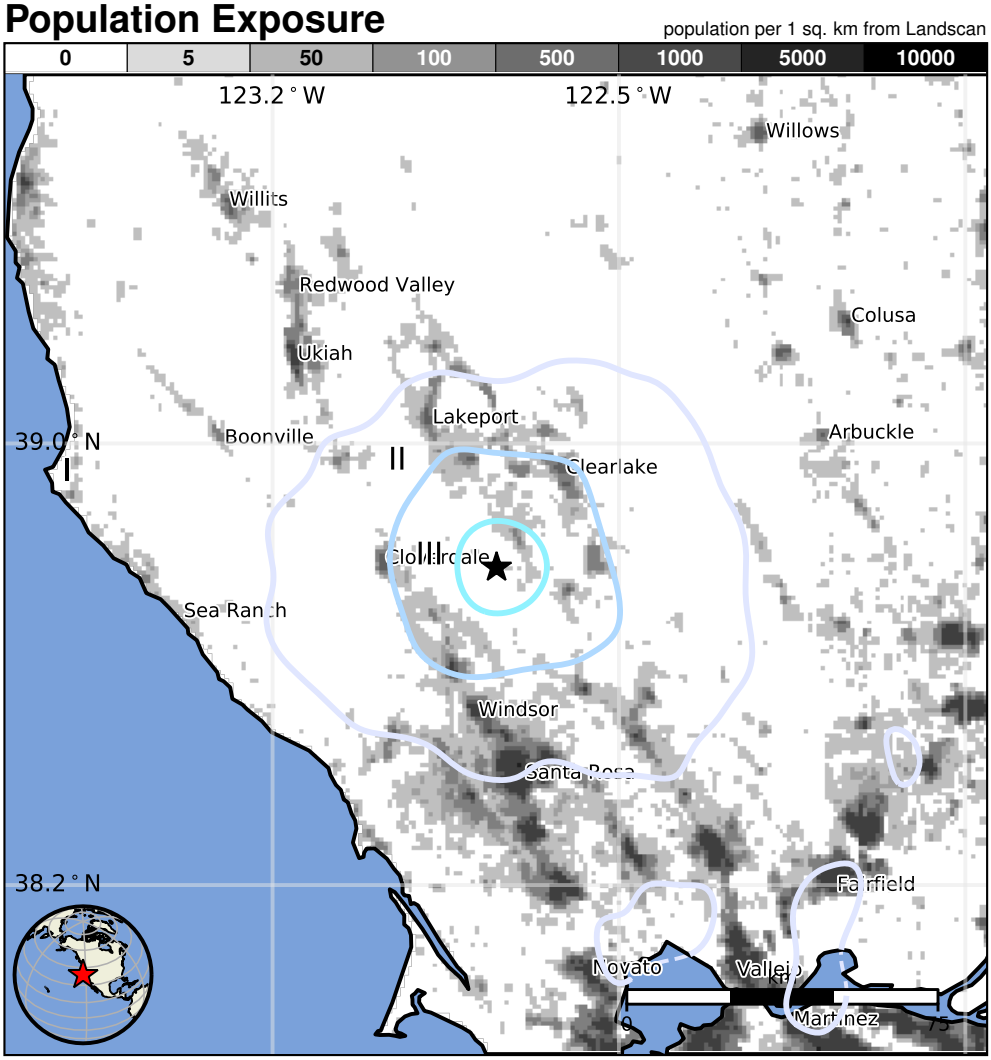


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		1,719k*	680k	2k	0	0	0	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are highly resistant to earthquake shaking, though some vulnerable structures exist. The predominant vulnerable building types are unreinforced brick masonry and reinforced masonry construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1993-09-21	396	6.0	VI(47k)	1
2003-12-22	383	6.6	VI(8k)	2
1989-10-18	206	6.9	VIII(109k)	62

Recent earthquakes in this area have caused secondary hazards such as landslides and liquefaction that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
IV	Cobb	2k
III	Middletown	1k
III	Lower Lake	1k
III	Kelseyville	3k
III	Hidden Valley Lake	6k
III	**Clearlake**	**15k**
II	**Fairfield**	**105k**
II	**Santa Rosa**	**168k**
I	Concord	122k
I	**Vallejo**	**116k**
I	Antioch	102k

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

https://earthquake.usgs.gov/earthquakes/eventpage/nc73358970#pager

Event ID: nc73358970